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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,216	01/29/2004	Ming-Hsin Liu	WOO 121	3312

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04/12/2007

EXAMINER
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TRIEU, THERESA

ART UNIT	PAPER NUMBER
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3748

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/766,216	<b>Applicant(s)</b> LIU ET AL.	
	<b>Examiner</b> Theresa Trieu	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-10 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is indefinite and functional because insufficient structure or structural relationships are recited to support the statements the partition plates each are comprised of left and right partition members.... left and right air paths. In other words, there is no reference frame for left and right partition plate members 344, 345, left and right air path with respect to the rotors 411, 421.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 1, 2, 4, 7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by any one of Little, Jr. (Patent Number 3,198,120) or Maruyama (Patent Number 5,674,051).

Regarding claims 1, 2, 4, 7, 9 and 10, Little, Jr. (as shown in Figs. 1-18) or Maruyama (as shown in Figs. 1-3) discloses a multi-stage vacuum pump comprising: a plurality of casings (22, 26 in Little, Jr.; 4a, 4c in Maruyama) axially connected in series, the casings each defining a compression chamber inside thereof; a plurality of partition plates (24 in Little, Jr.; 4b in Maruyama) each respectively mounted between two adjacent casings of the casings to separate the compression chambers of the two adjacent casings, the partition plates each having a predetermined wall thickness and two through holes; a mover module, the mover module comprising two parallel shafts (10, 16 in Little, Jr.; 3a, 3b in Maruyama) respectively extended through the two through holes of each of the partition plates, and a plurality of rotors (30, 32; 36, 38 in Little, Jr.; 1a, 1b; 2a, 2b in Maruyama) symmetrically formed integral with the two parallel shafts respectively and arranged in pairs, wherein each pair of two adjacent rotors of the rotors received in one corresponding compression chamber of the casings; and a synchronizer gear module (12, 14 in Little, Jr.; 14a, 14b in Maruyama) is rotate the shafts and the rotors synchronously; wherein the partition plates each have a front face, a rear face, and at least one air path respectively formed in the respective wall thickness and extended from the front face to the rear face; the partition plates (24 in Little, Jr.; 4b in Maruyama) each are comprised of left and right partition plate members, the left and right partition plate member being abutted against each other, the left/right partition plate member defining left/right air path, the left and right air path being linked to form one air path of the respective partition plate; at least one air path of each the partition plate (24 in Little, Jr.; 4b in Maruyama) being formed surrounding the through holes of

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the respective partition plate; the partition plates each have a front opening in the respective front face, and a rear opening in the respective rear face in air-communication with the front opening through the at least one air path of the respective partition plate; the front opening of each of the partition plates (24 in Little, Jr.; 4b in Maruyama) guiding air into the at least one air path of the respective partition plate, and the rear opening of each of the partition plates guiding air out of the at least one air path of the respective partition plate; wherein the synchronizer gear module (12, 14 in Little, Jr. ; 14a, 14b in Maruyama) driving the rotors (30, 32; 36, 38 in Little, Jr.; 1a, 1b; 2a, 2b in Maruyama) and the shafts (10, 16 in Little, Jr.; 3a, 3b in Maruyama) to rotate synchronously without causing contact between each two adjacent rotors. Note that in claims 1 and 10 the claim language "adapted to" makes optional but does not limit the claims 1 and 10 to the structure of the "synchronizer gear module for rotating the shafts and the rotors synchronously; the partition plates for guiding air". *See MPEP §2106 II C REVIEW THE CLAIMS.*

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marauyama in view of Chen et al. (Chen) (Patent Number 6,123,526)

Marauyama discloses the invention as recited above; however, Marauyama fails to disclose a seal.

Chen teaches that it is conventional in the art to utilize the partition plates 13 each further having an annular groove (not numbered; however, clearly seen in Fig. 5), and an annular elastomer 17 respectively mounted in the annular groove and pressed on the corresponding casing to seal the compression chamber of the corresponding casing. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the annular elastomer, as taught by Chen in the Marauyama apparatus, since the use thereof would have prevented the leakage.

4. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marauyama in view of design choice.

Marauyama discloses the invention as recited above; however, Marauyama fails to disclose the partition plates each being comprised of three/four partition plate members abutted against one another. It is examiner's position that one having ordinary skill in the multi-stage vacuum pump art, would have found it obvious to utilize each of the partition plate having three or four partition plate members abutted against one another, since they are merely design parameters, depending on the design variables such as the load applied to the pump and the

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viscosity of the lubricating fluid or depending on being used for a particular purpose or solving a stated problems. Moreover, there is nothing in the record which establishes that the claimed partition plate members, presents a novel of unexpected result (See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

***Allowable Subject Matter***

5. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of three patents: Stoner (U.S. Patent Number 599,648), Weatherston et al. (U.S. Patent Number 3,667,874) and Higuchi et al. (U.S. Patent Number 4,789,314), each further discloses a state of the art.

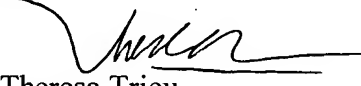
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 571-272-4868. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT  
April 5, 2007

  
Theresa Trieu  
Primary Examiner  
Art Unit 3748